Before the
Federal Communications Commission
Washington, D.C. 20554

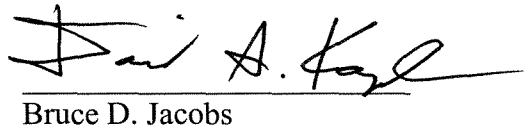
In the Matter of	)	
	)	
Reallocation of the 216-220 MHz,	)	WT Docket No. 02 - 08
1390-1395 MHz, 1427-1429 MHz,	)	RM-9267
1429-1432 MHz, 1432-1435 MHz,	)	RM-9692
1670-1675 MHz, and 2385-2390 MHz	)	RM-9797
Government Transfer Bands	)	RM-9854
	)	RM-9882

ERRATUM

XM Radio Inc. ("XM Radio") hereby files this Erratum to its Comments filed on March 4, 2002 in the above-captioned proceeding. XM Radio's comments urged the Commission to protect customers of the Satellite Digital Audio Radio Service by adopting the same out-of-band emissions limits in any newly-assigned 2.3 GHz frequencies as the Commission currently applies to Wireless Communications Services licensees operating in the 2305-2320 MHz and 2345-2360 MHz bands. Throughout its Comments, however, XM Radio inadvertently referred to the 2380-2385 MHz band when it intended to refer to the 2385-2390 MHz band. To be clear, XM Radio does not propose that the Commission alter the out-of-band emissions limits for licensees in the 2380-2385 MHz band. XM Radio has attached hereto a corrected version of its comments.

Respectfully submitted,

XM RADIO INC.



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March 11, 2002

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COMMENTS OF XM RADIO INC.

XM Radio Inc. ("XM Radio") hereby files these Comments in the above-captioned proceeding in which the Commission is considering service rules for licensing of 27 MHz of spectrum transferred from Government to non-Government use, including the 2385-2390 MHz band.[1] To protect providers of Satellite Digital Audio Radio Service ("SDARS") operating in the 2320-2345 MHz band, XM Radio urges the Commission to adopt the same out-of-band emissions limits for licensees in the 2385-2390 MHz band that currently apply to Wireless Communications Service ("WCS") licensees operating in the 2305-2320 MHz and 2345-2360 MHz bands.

Background

In 1995, the Commission allocated spectrum in the S-band to SDARS. XM Radio and Sirius Satellite Radio Inc. ("Sirius") were the winning bidders in the SDARS auction held in

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[1] Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Notice of Proposed Rulemaking*, WT Docket No. 02-08, FCC 02-15 (rel. February 6, 2002) ("NPRM").

April 1997, together committing nearly $170 million to the U.S. Treasury.[2] XM Radio was awarded the license to provide SDARS in the 2332.5-2345 MHz band. As the Commission has repeatedly recognized, this new consumer-based mass media service promises enormous public interest benefits for the U.S. public.[3]

Since its licensing, XM Radio and Sirius have made extraordinary progress in the development of their SDARS systems. Both licensees have successfully launched their satellites and begun commercial service. XM Radio has proven to be a tremendous success, providing high-quality, continuous, nationwide multichannel digital audio service. XM Radio has won numerous awards, including Fortune Magazine's Product of the Year,[4] and achieved 30,000 subscribers in its first eight weeks of service, making it the fastest selling audio product of the last twenty years.

SDARS is bringing about the consumer benefits the Commission hoped it would when it issued licenses in 1997. The availability of SDARS is increasing the variety of programming available to the listening public, offering an unprecedented variety of music and information, including in areas of the country that have traditionally been underserved by terrestrial radio

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2 American Mobile Radio Corporation, 13 FCC Rcd 8829 (Int'l Bur., 1997); Satellite CD Radio, 13 FCC Rcd 7971 (Int'l Bur., 1997).

3 *See, e.g.*, Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band, *Report and Order, Memorandum Opinion and Order*, 12 FCC Rcd 5754, ¶ 1 (1997) ("*SDARS Order*").

4 Peter Lewis, *My Favorite Things*, Fortune Magazine, Dec. 24, 2001, at 169 (naming XM Satellite Radio "Product of the Year" and stating "[o]f all the new technologies of 2001, XM Satellite Radio is way, way, way above the rest. It's the first major advance in radio since FM emerged in the1960s, and the best thing to happen to mobile music since the dashboard CD player.").

stations.[5] Not only are consumers enjoying increased diversity in audio programming, they are experiencing high-quality, digital sound not offered by terrestrial radio stations.

SDARS licensees are somewhat more susceptible to interference from out-of-band emissions than other spectrum users. Reception of SDARS depends on the transmission of a signal from a satellite to a very small antenna. While XM Radio's satellites are state-of-the-art and among the most powerful communications satellites ever manufactured, the downlink signal power available to the receiver is much lower than terrestrial-based communications systems, thereby requiring very sensitive SDARS receivers.[6] In addition, because SDARS receivers operate predominantly in a mobile environment, they use omnidirectional antennas that eliminate the ability to "point" an antenna away from a source of interference. Moreover, unlike cellular, PCS, and other wireless telecommunications services, SDARS is a digital audio broadcast system requiring a service availability of over 99%. The loss of an adequate signal will produce a total loss of audio. Therefore, the availability requirements for an SDARS system are much more stringent than that of mobile telephony systems. People using mobile phones have accepted the fact that intermittent outages or bursts of noise occur during the course of a conversation. Intermittent outages or bursts of noise will not be tolerated by an SDARS subscriber who is paying for uninterrupted, high-quality digital radio.

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5 *SDARS Order* at ¶ 1.

6 XM Radio provides service to its subscribers directly through its licensed SDARS satellites in over 99% of its coverage area. Terrestrial repeaters are used only to provide service in urban areas and elsewhere where it may be difficult to receive satellite-based signals due to line-of-sight blockage from foliage, buildings, and other obstacles. Even within the coverage area of the terrestrial repeater, there will be areas where the amplitude of the terrestrial signal is close to the receiver threshold.

In the above-captioned proceeding, the Commission is considering service rules for licensing of 27 MHz of spectrum transferred from Government to non-Government use pursuant to the provisions of the Omnibus Budget Reconciliation Act of 1993[7] and the Balanced Budget Act of 1997.[8] One of the spectrum bands under consideration is the 2385-2390 MHz band, the lower edge of which is only 40 MHz from the upper edge of XM Radio's licensed frequency band. The 2385-2390 MHz band is currently used by both government and non-government incumbents for aeronautical telemetry operations. NPRM at ¶ 28. Earlier this year, the Commission reallocated this spectrum for both fixed and mobile commercial operations.[9] In the above captioned NPRM, the Commission asks for comments on service rules for this spectrum, including appropriate out-of-band emissions limits, emissions masks, power limits, and antenna height limits to protect services operating in adjacent bands. NPRM at ¶ 105.

Discussion

To protect SDARS operations, XM Radio urges the Commission to adopt the same out-of-band emissions limits and measurement techniques for confirming these limits for licensees operating in the 2385-2390 MHz band that currently apply to WCS licensees operating in the 2305-2320 MHz and 2345-2360 MHz bands. *See* 47 C.F.R. § 27.53.[10] The Commission has made clear that SDARS subscribers can expect to receive high-quality service without the threat

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7 Pub. L.103-66, 107 Stat. 312 (1993).

8 Pub. L.105-33, 111 Stat. 251 (1997).

9 Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Report and Order and Memorandum Opinion and Order,* ET Docket No. 00-221, FCC 01-382 (rel. January 2, 2002).

10 The pertinent parts of Section 27.53 that XM Radio urges the Commission to apply to 2385-2390 MHz licensees to protect SDARS operations are listed in Exhibit A.

of unreasonable interference. The Commission has stated that that "[i]n authorizing DARS, it was our desire to ensure a high quality radio service."[11] The Commission has further stated that:

> We [recognize] that the 2320-2345 MHz frequency band is the only spectrum specifically available for provision of Satellite DARS in the United States. Accordingly, if Satellite DARS in this spectrum is subject to excessive interference, the service will not be successful and the American public will not benefit from the service. *WCS MO&O* at ¶ 27.

With these principles in mind, the Commission in 1997 adopted out-of-band emissions limits for WCS licensees operating in the 2305-2320 MHz and 2345-2360 MHz bands to protect SDARS operations in the 2320-2345 MHz band.[12] In adopting these limits, the Commission noted that "[w]hile it is our desire to provide WCS licensees with the maximum flexibility to provide a wide range of services, we also must ensure that WCS operations do not cause harmful interference or disruption to adjacent satellite DARS reception." *WCS Order* at ¶ 136.

Like WCS licensees, 2385-2390 MHz licensees will be operating close in frequency to SDARS licensees (40 MHz from the upper edge of XM Radio's licensed frequency band) and can offer a range of fixed and mobile services. Thus, because potential operations in this band present the same out-of-band interference concern to SDARS licensees as potential WCS operations, the Commission should apply the same out-of-band emissions limits to 2385-2390

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11 Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), *Memorandum Opinion and Order*, 12 FCC Rcd 3977, ¶ 25 (1997) ("*WCS MO&O*").

12 The Commission originally adopted out-of-band emissions limits for WCS licensees to protect SDARS licensees in February 1997. Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), *Report and Order*, GN Docket No. 96-228, FCC 97-50, at ¶¶ 123-144 (Feb. 19, 1997) ("*WCS Order*"). In April 1997, the Commission modified these limits for certain portable WCS devices. *WCS MO&O* at ¶¶ 17-33.

MHz licensees that currently apply to WCS licensees operating in the 2305-2320 MHz and 2345-2360 MHz bands.

Conclusion

Based on the foregoing, XM Radio urges the Commission to act consistently with the views expressed herein.

Respectfully submitted,

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Exhibit A

27.53 Emission limits.

(a) For operations in the band [2385-2390 MHz], the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (p) within the licensed band(s) of operation, measured in watts, by the following amounts:

(1) For fixed, land, and radiolocation land stations: By a factor not less than 80 + 10 log (p) dB on all frequencies between 2320 and 2345 MHz.

(2) For mobile and radiolocation mobile stations: By a factor not less than 110 + 10 log (p) dB on all frequencies between 2320 and 2345 MHz.

(3) [NOT APPLICABLE]

(4) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

(5) In complying with the requirements in §27.53(a)(1) and § 27.53(a)(2), WCS equipment that uses opposite sense circular polarization from that used by Satellite DARS systems in the 2320-2345 MHz band shall be permitted an allowance of 10 dB.

(6) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the edges, both upper and lower, of the licensee's bands of operation as the design permits.

(7) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

(8) Waiver requests of any of the above out-of-band emission limits in paragraphs (a)(1) through (a)(7) of this section shall be entertained only if interference protection equivalent to that afforded by the limits is shown.

(9) In the 2305-2315 MHz band, if portable devices comply with all of the following requirements, then paragraph (a)(2) shall not apply to portable devices, which instead shall attenuate all emissions into the 2320-2345 MHz band by a factor of not less than 93 + 10 log (p) dB:

(i) The portable device has a duty cycle of 12.5% or less, with at most a 312.5 microsecond pulse every 2.5 milliseconds;

(ii) The portable device must employ time division multiple access (TDMA) technology;

(iii) The nominal peak transmit output power of the portable device is no more than 200 milliwatts (25 milliwatts average power);

(iv) The portable device operates with the minimum power necessary for successful communications;

(v) The nominal average base station transmit output power is no more than 800 milliwatts when the base station antennas is located at a height of at least 8 meters (26.25 feet) above the ground;

(vi) Only fixed and portable devices and services may be provided: vehicle-mounted units are not permitted; and

(vii) Transmitting antennas shall employ linear polarization or another polarization that provides equivalent of better discrimination with respect to a DARS antenna.

(10) The out-of-band emissions limits in paragraphs (a)(1) through (a)(9) of this section may be modified by the private contractual agreement of all affected licensees, who shall maintain a copy of the agreement in their station files and disclose it to prospective assignees or transferees and, upon request, to the Commission.

* * *

(f) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

CERTIFICATE OF SERVICE

I, Sylvia A. Davis, a secretary with the law firm of Shaw Pittman LLP, hereby certify that on this 11th day of March 2002, served a true copy of the foregoing Erratum by first-class United States Mail, postage prepaid, upon the following

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Document #: 1221889 v.1